

**DEGRADABLE POLY(ETHYLENE GLYCOL) HYDROGELS
WITH CONTROLLED HALF-LIFE AND PRECURSORS THEREFOR**

ABSTRACT

This invention relates to hydrolytically degradable gels of crosslinked poly(ethylene glycol (PEG) structures. Addition of water causes these crosslinked structures to swell and become hydrogels. The hydrogels can be prepared by reacting two different PEG derivatives containing functional moieties at the chain ends that react with each other to form new covalent linkages between polymer chains. The PEG derivatives are chosen to provide covalent linkages within the crosslinked structure that are hydrolytically degradable. Hydrolytic degradation can provide for dissolution of the gel components and for controlled release of trapped molecules, including drugs. Reagents other than PEG can be avoided. The hydrolysis rates can be controlled by varying atoms adjacent to the hydrolytically degradable functional groups to provide substantially precise control for drug delivery in vivo.

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